

CLAIMS

What is claimed is:

1. A rate-of-change switch which comprises:
a transducer that produces an output in response to an input;
a differentiator being operatively connected to said output; and
means, being operatively connected to said differentiator, for
performing a first switching function.
2. A rate-of-change switch as claimed in Claim 1 in which said
transducer comprises a transducer that produces an output that is proportional
to said input.
3. A rate-of-change switch as claimed in Claim 1 in which said
transducer comprises a transducer that produces an output that is proportional
to a tilting input.
4. A rate-of-change switch which comprises:
a transducer that produces an output in response to an input;
a first differentiator being operatively connected to said output;
a second differentiator being operatively connected to said first
differentiator; and
means, being operatively connected to said second differentiator, for
performing a first switching function.
5. A rate-of-change switch as claimed in Claim 4 which further
comprises means, being operatively connected to said first differentiator, for
performing a second switching function.
6. A rate-of-change control device which comprises:
an input terminal;
a differentiator being operatively connected to said input terminal; and
means, being operatively connected to said differentiator, for
performing a first switching function.

7. A rate-of-change control device which comprises:
an input terminal;
a first differentiator being operatively connected to said input terminal;
a second differentiator being operatively connected to said first
differentiator; and
means, being operatively connected to said second differentiator, for
performing a first switching function.

8. A rate-of-change control device as claimed in Claim 7 which said
device further comprises means, being operatively connected to said first
differentiator, for performing a second switching function.

9. A method which comprises:
a) producing an output in response to a manual input;
b) differentiating said output with respect to time; and
c) performing a first switching function in response to said differentiated
output.

10. A method as claimed in Claim 9 in which said producing step
comprises:
a) attaching a transducer to a person; and
b) body-member actuating said transducer.

11. A method as claimed in Claim 9 in which:
a) said method further comprises differentiating said output a second
time;
b) said performing step comprises performing said first switching
function in response to said second differentiated output.

12. A method as claimed in Claim 9 in which:
a) said differentiating step comprises differentiating said output twice
with respect to time; and

b) said method further comprises performing a second switching function in response to said twice differentiated output.

13. A method as claimed in Claim 9 in which said method further comprises:

a) performing said first switching function when said output is increasing; and

b) performing a second switching function when said output is decreasing.

14. A method as claimed in Claim 9 in which said method further comprises:

a) performing a second switching function; and

b) producing a logic output as a function of both of said switching functions.

15. A method which comprises:

a) attaching a tilt-sensitive transducer to a person;

b) body-member tilting said transducer;

c) producing a first output proportional to said body-member tilting;

d) differentiating said first output with respect to time; and

e) performing a first switching function in response to said differentiated first output.

16. A method as claimed in Claim 15 in which said method further comprises:

a) attaching a second tilt-sensitive transducer to said person;

b) body-member tilting said second tilt-sensitive transducer;

c) producing a second output proportional to said body-member tilting of said second tilt-sensitive transducer;

d) differentiating said second output with respect to time; and

e) performing said first switching function as a logic combination of said first and second differentiated outputs.

17. A method for initiating operation of a first electrical device which comprises:

- a) initiating a sequential plurality of time delays in which one is a window of opportunity;
- a) refraining from momentary-contact switching during a first time delay that follows said initiating step;
- b) momentary-contact switching within said window of opportunity that follows said first time delay; and
- c) refraining from momentary-contact switching during a second time delay that follows said window of opportunity.

18. A method as claimed in Claim 17 in which said momentary-contact switching step comprises:

- a) manually-actuating a transducer;
- b) producing an output in response to said manual-actuating step;
- c) differentiating said output with respect to time;
- d) performing said momentary-contact switching step as a function of said differentiated output.

19. A method as claimed in Claim 17 in which said method further comprises:

- a) momentary-contact switching during said second time delay;
- b) initiating operation of a second electrical device in response to said momentary-contact switching during said second time delay.

20. A method as claimed in Claim 17 in which:

- a) said method further comprises initiating operation of a second electrical device in response to momentary-contact switching during said second time delay; and
- b) one of said momentary-contact switching steps comprises manually producing an output, and differentiating said output with respect to time.

21. A method for controlling selected ones of a plurality of electrically-powered functions comprises:

- a) providing an opportunity for selection from said electrically-powered functions;
- b) selecting one of said electrically-powered functions;
- c) controlling said one electrically-powered function; and
- d) returning to said providing step.

22. A method as claimed in Claim 21 in which said method further comprises:

- a) manually-actuating a transducer;
- b) producing an output in response to said manual-actuating step;
- c) differentiating said output with respect to time; and
- d) performing said controlling step as a function of said differentiated output.

23. A method as claimed in Claim 21 in which said providing step comprises:

- a) initiating a sequential plurality of time delays in which a second one is a window of opportunity;
 - b) momentary-contact switching within said window of opportunity;
- and
- c) refraining from said momentary-contact switching step except in said window of opportunity.

24. A method as claimed in Claim 21 in which said selecting step comprises:

- a) manually producing an output; and
- b) differentiating said output with respect to time.

25. Apparatus which comprises:

an electrically-powered conveyance;

an environmental control unit that includes a plurality of accessible control functions;
a momentary-contact switch; and
means for selectively controlling said conveyance or said environmental control unit by said momentary-contact switch.

26. Apparatus as claimed in Claim 25 in which said momentary-contact switch comprises a differentiator.

27. Apparatus as claimed in Claim 25 in which:
control of both speed and steering of said conveyance are accomplished by selectively tilting X- and Y-axis transducers; and
said momentary-contact switch comprises one of said transducers and a differentiator.

28. An electrically-powered conveyance having a wheel and an electric motor that is drivingly connected to said wheel, the improvement which comprises:

a transducer that produces an output that is proportional to an input;
means for controlling speeds of said electrically-powered conveyance proportional to said output;
a differentiator being operatively connected to said transducer; and
means, being operatively connected to said differentiator, for shutting down said conveyance whenever said differentiator produces a signal that exceeds an allowable magnitude.

29. Apparatus as claimed in Claim 28 in which:
said conveyance includes a second wheel and a second electric motor that is drivingly connected to said second wheel;
said means for controlling said conveyance comprises means for differential speed control of said wheels;
said transducer comprises a tilt axis transducer;

said differential control of said speed of said wheels comprises a second tilt axis transducer, and means for attaching said tilt axis transducers to a person; and

said means for shutting down said conveyance comprises means for shutting down said conveyance whenever a differentiated output from either of said tilt axis transducers exceeds an allowable magnitude.

30. Apparatus as claimed in Claim 28 in which said differentiator produces both first and second differentials with respect to time; and

said means for shutting down said conveyance whenever said differentiator produces said signal that exceeds said allowable magnitude comprises means for shutting down said wheelchair whenever said second differential exceeds said allowable magnitude.